TEACHING SALARIES AND INEQUALITY: AN EXPECTED BUT NOT SEEN OUTCOME

An Undergraduate Research Scholars Thesis

by

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TABLE OF CONTENTS

ABSTRACT

Teaching Salaries and Inequality: An Expected but not Seen Outcome

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This research project looks into a specific endogenous intervention in Texas in 1999, where the Texas legislature passed an across the board salary increase for all teachers of $3000. The goal of this research is to use the intervention to help explain certain education indicators, specifically ones dealing with education inequality. Previous research in this field has primarily looked into the opposite relationship, as there is strong evidence to support that low-income schools have often paid a compensating wage differential to teachers. In Texas, though, a statewide salary increase has offered a unique opportunity to study how teacher salaries affects things like education inequality. As such, the project's findings support that increasing teacher salary has a positive effect on reducing education inequality.

INTRODUCTION

Education is one of the most important tenets of society. It influences our economy, our security, and the overall wellbeing of the entire nation. To that point, the salary that the United States pays its teachers remains well below the average for the other industrial nations (Ladd, 2007). As a result, the industry suffers a high turnover rate and a pool of significantly lower quality applicants than in previous decades, creating labor shortage in many areas (Ingersoll, 2002). Naturally, this volatile labor market influences the quality of education in the nation. Schools paying just a few thousand more dollars to teacher salaries, saw a noticeable bump in test scores, indicating that teacher salary affects educational attainment in the classroom (Rand Education, 2006). However, the problem with this type of research on teacher salary is that teacher salary is a very endogenous variable, and any hypothesis testing is prone to reverse causal. An example of this would be when attempting to determine whether teacher income effects educational inequality in minorities. It is a supported theory that there is a compensating wage differential for schools that have a high percentage of minority students. (Matin, 2008) For this reason attempting to test any hypothesis dealing with increasing teacher income and educational inequality with minorities would be highly endogenous. In order to overcome this issue, the literature base has shifted towards studying merit-based pay schemes, as including a performance measure in pay increases would resolve issues associated with reverse causality. However, this research has had mixed results with many studies indicating no effect (Gius, 2012). A policy decision in 1999 in Texas, however, allows the opportunity for researchers to look at the effect of raising teacher salary without the problems associated with reverse causality or adding a performance indicator. The state introduced a flat $3000 salary increase in an attempt

to solve issues like retention and teacher quality. (SB 4, 1999). This also has the effect of creating an endogenous intervention, meaning a unique situation to analyze the effects of increasing teacher salary like education inequality, educational attainments, and other education variables.

Thesis Statement

Education inequality will be indirectly reduced by increasing teacher salaries, as increasing salaries helps create a more stable and qualified work force. These teachers then become better equipped to address the issues plaguing students affected by education inequality, thus helping reduce the problem.

Theoretical Framework

In order to address this argument, the following hypothesis will be tested in a two-way fixed effects time series model:

H1: As teacher salary increase education inequality decreases

CHAPTER I

LITERATURE REVIEW

Education Inequality

In the United States, education can often be seen as the means of moving up in society. It essentializes the ideal of the American dream, where if you do well in school you can also do well in life. This can be seen by the fact that those who are the first in their family to attain a college degree on average earn much more than their counterparts (Ratcliff & Kalish, 2017). However, as society moves towards looking at education as a means of judging high quality individuals, it has also created a gate essentially for the middle class. (Kelly, 2005) Because of this, access to education has become a critical issue in being able to attain success in life, with few exceptions.

With the importance of education being so high in America, unequal access to this resource signifies an issue of critical importance. Education inequality often remains a nebulous subject with many different definitions and meanings, however the core aspect comes to unequal access to educational resources (Darling-Hammond, 1998). This is often characterized as lack of access to high quality peers, educational opportunities, poorer schools, and other items of this nature. For example, a school that has the ability to offer more advanced courses would constitute a factor in education inequality. Some of this variation between schooling is expected due to the diverse system in the United States, however, much of the problem lies in specific groups being targeted by the inequality. It has long been the case that the majority of the problem lies with racial education inequality in the system (Watkins et al, 2017) as well as inequality affecting socioeconomically poor student population. These groups have often been the populations most

affected by the structural problems of the American education system, due to their vulnerability historically.

In order to analyze education inequality, the primary funding mechanism helps reveal core problems. Property taxes help fund the majority of schools, with only a minimum amount coming from federal resources (U.S Department of Education, 2017). The states also provides some funding, but the majority of the funding is left up to the schools. Some states leave the local government responsible for the majority of the funding for their schooling system, and almost all of them choose property taxes. However, because of the localized nature of property taxes, they can often be one of the leading causes of education inequality, as students of color or low-income students will receive much less funding than their counterparts due to their location (Morgan & Amerikaner, 2018). While some states have attempted to address this issue with different programs, many have opted to ignore the problem, leading to the problems that exist today, especially when looking at the Texas education system.

Education inequality also has an interesting effect on teacher salaries. Due to the nature of education inequality, the environment that produces it is often a harsher work environment for teachers. This can be seen in areas with high numbers of poor performing, low income, and minority students as they have extremely high turnover rates for teachers (Loeb et al, 2005). In order for schools to actually attract teachers to operate those schools, schools must pay their teachers a compensating wage differential (Matin, 2008). This has produced cases where education inequality has caused teacher salaries to increase, leading to a problem of reverse causality if a researcher wants to study the affect teacher salary has on reduced education inequality. Although low quality teachers can be characterized as education inequality, increasing the quality of teachers might have a large affect in reducing other instances of

inequality. A higher quality teacher could possibly overcome some of the structural issues that a student may be facing and allow them reach the levels of their peers.

Education Economics

Education is a key tenet of the economy, as makes up one of the main elements of human capital. Education improves the overall quality of individuals in society, and allows for higher productivity in the economy. This embodies why the government perceives a strong responsibility for educations because of the large positive externality it causes, which represents the primary justification for its involvement (Friedman, 1982). Educations helps reduce poverty, increase overall healthcare, and increase the development of a nation, but it comes at a prohibitive cost that many consider unnecessary. Because of this, the United States has over the past few decades had a problem with funding its education system, causing the decline of many aspects of education, including perhaps one the most important ones, teachers.

Teachers have always been a key tenet of a good education system, however due to primarily funding issues the profession has waned. Data shows that new teachers have an attrition rate of around 40%, with many reporting issues related to funding as the reason for leaving (Ingersoll & Smith, 2003) The attrition rate creates a problem that feeds on itself, with new teachers filling in the spots left by those exiting the industry then quitting for the exact same reason. With so many new teachers leaving the profession at the beginning, the industry has a large gap of experienced teachers, which has negatively harmed the overall schooling system (Flynt & Morton, 2009). The system needs to look at solutions to address the problem in order to solve the unsustainable problem of the teaching industry.

One of the favorite ideas of the past few decades is the proposal of a merit-based pay system for teachers. Proponents argue that putting free market mechanism into teaching will overall

increase the quality of schooling, as teachers will be incentivized by increased pay to have their students perform. However, when applied to reality, these ideas have universally failed to produce evidence of increased performance (Springer et al, 2012). One of the primary reasons for this the failure comes from the type of people that the teaching profession attracts, teachers are not teachers for the money, rather they are teachers because they want the opportunity to help better their students. Studies have shown that merit pay can have unattended consequences due to this public service motivation of the teachers, revealing how the merit system in its current form is not compatible with a profession like teaching (Langbein, 2010). Nevertheless, incentive-based pay is popular because it has been successful in producing innovation and increased performance for many industries, but people fail to realize that incentives do not work in all industries. Research continually shows that incentive pay does not fit into teacher pay as it does not fit their primary job motivation and can be counterproductive to the industry by reducing cooperation among teachers (Johnson, 1984). Proponents of merit-based pay schemes for teachers fail to account for basic difference between public and private sector employees, their primary job motivators.

When analyzing the problem, the simple truth of that matter reveals itself to be underfunded teachers. While simple, the idea of paying teachers more has often been seen as the solution to solving many of the problems associated with education in the United States but has been ignored in favor of attempting other less costly measures (Ingersoll & Smith, 2003). Teachers represent one of the largest links in the chain, when their quality decreases, the repercussions affect everything. Studies have shown that out of all the different variables effecting student performance, teacher quality remains the largest indicators (Rivkin et al, 2005). In order to try

and bring about change so that society can overall improve, there needs to be in increase in literature showing the improvement that can come out from teacher salary increases.

Texas Education System

The Texas Education system comprises over 1000 different independent school districts, with a single school district being integrated with the local city. These school districts are overseen by the Texas Education Agency and the State Board of Education, who are elected from across the state, with one governor appointed position. However, due to the nature of the independent school districts, which are all overseen by their own school boards, the state intervention is limited to low performing districts (Education Code Chapter 39). There is also a State Board of Educator Certification, which is in charge of certification and conduct of educators in the state. But for the most part the State helps guide and advise schools districts, but leaves the majority of the decisions up to each district.

Surprisingly, funding for school districts in Texas has been heavily influenced by the Texas Supreme Court. In Edgewood Independent School District v. Kirby, the court ruled that the wealth inequality difference due to property taxes were unconstitutional and pushed the issue to the state legislature to solve. After several years of deliberation and many failures, the state finally passed a bill that in essence is a wealth distribution tool, and is nicknamed the "Robin Hood" law. The law mandates that school districts that have a certain threshold, share their local tax revenue with poorer school districts (TEA, 2018). Unfortunately, even though the Robin Hood law has the seeds of an efficient taxation method to solve wealth inequality, the outcome is less than ideal. The tax fails to adequately transfer wealth because it relies heavily on a marginal tax rate rather than lump sum transfer, causing capitalization and shrinking the tax base beyond what would be required to solve the issue (Hoxby & Kuziemko, 2004). The outcome is that

wealth inequality still exists for school districts in Texas, with inequality still for the most part effecting student performance (McClendon, 2017).

The Texas education system is one of the largest in the country, however it is also one of the lowest ranked schooling systems in the nation. According to *Quality Counts*, and education newspaper that annually reports school rankings, Texas ranks 41st out of all the states in terms of quality of education, based off a compressive rating system that takes into account funding, achievement, and potential for success for each state (Quality Counts, 2018). The report also shows the inadequate funding for schools in Texas, giving Texas a score of a D+. The low performance and general poor level of education makes the state a prime candidate for large amounts of education inequality.

Texas, due to is large size and general culture, is also home to a number of private, charter, and homeschooled children. Charter schools follow traditional rules for public schools but have less regulations overall in comparison to a normal public school. For example, charter schools are not held to the same standards as regular public schools, so they do not have to provide minimum teacher planning periods or follow class size guidelines. Charter schools are required to follow regulations like not charging tuition and are held to many other education requirements other public schools are held too, like standardized testing. Homeschooling, however, has almost no restrictions, and the state has almost no say in how those children are schooled, besides for vague guidelines (Morath, 2016). Private schools follow a similar path with the state not having any regulatory power over them, although several schools choose to be accredited by other institutions. It is very likely that the presence of these alternative schooling systems has an effect on education inequality, but due to the independent nature it is very hard to account for it

CHAPTER II

THEORY

Labor Economics

A major theory in labor economic is that offering a higher salary will bring in more qualified individuals. This theory can easily be seen throughout society, where high tech companies are drawing in all the math orientated professions, as they offer the highest comparable salary for them. Unfortunately for the profession, teaching is drastically underpaid across the United States (Gonzalez, 2008). Because of this, the profession is plagued with understaffing, unqualified individuals, and a high turnover rate. A study analyzing the reason for teacher turnover and lack of qualified individuals found the largest reason was the salary (Ingersoll, 2003) This means that increasing the salary should have a significant impact on the teacher pool.

This issue of whether school districts can effectively buy more qualified teachers is a very well researched field, with mixed results. However, many newer studies show that increasing teacher salaries helps decrease turnover rates, which in turn results in higher quality teachers (Hendricks, 2014). Older literature overlooked the main issues in why the teaching profession is plagued with problems today, many of which can be resolved through increasing teacher salary. Due to inadequate compensation for teachers for such a long timeframe, the industry is struggling to attract qualified or motivated individuals to the field, but when school districts increase their salary, they increase their attractiveness to those individuals (Hough, 2012). The problems are not immediately resolved, however, when salary is increased, as the market lacks a large pool of high quality teachers, because of the unattractiveness of a low paying industry and the low status according to teachers in the US. Research has shown that teachers gain in quality as they gain

experience teaching (Papay & Kraft, 2015), so in order to attract high quality teachers to the field, there needs to be first an investment in helping create them.

CHAPTER III

METHOD

Data

This research and analysis uses data that comes from the Texas Education Agency, which oversees public education in the State of Texas. The agency gathers information on everything from performance measures, like test scores, to property values in the area. The school districts directly report this data to the TEA, who cleans the data of identifiable information and posts to the agency website publicly. While there exist more in-depth datasets that contain more information, this was not chosen due to time constraints of the approval process and that the data present provides sufficient information for analysis. Specifically, this analysis pulled information from 1998 to 2012, in order to measure the initial impacts of the policy change and then the longer-term effects. However, it should be noted due to reporting issues in the 1990's and early 2000's, several measurements are missing in the early years, and the accuracy increases in years closer to the present.

Additionally, two supplementary sources complement the TEA information gathered, as they provide necessary variables in order to be able to control for teacher salary. National Center for Education Statistics supplied the local education agency identification numbers or LEAID for each school district in Texas. This information then allows the comparison of the original dataset with the Comparable Wage Index. The Comparable Wage Index is a measurement of the regional variations of salaries of people who are not educators. This provides a useful control variable, as it allows the model to account for cost of living in each school's area. Without it, the model would be prone to error due to higher cost of living cities not being as affected by the

salary increase. However, because the NCES only has information on the CWI up until 2005, another source was used in order to gather the CWI up to 2012. The creator of the measurement, Dr. Lori Taylor, updated the index and publicly posted the information on her institution's website.

Dependent Variables

The dependent variables in this analysis come from measurements that are related to education inequality. Education inequality, or the unequal access to educational resources, often times represent an as extremely difficult observation to measure, as the institutions where these events occur are the ones reporting the information, leading to potentially inaccurate information. Additionally, many of the qualities of education inequality go beyond school's ability to observe. Because of this fact, this analysis will rely on the secondhand measurements of this occurrence, variables such as graduation rates, dropout rates, and attendance. These variables were chosen because they represent the easiest observable measurements of a student's participation in school and the school's inequality in relation to that type of student. However, in order for these measurements to be pertinent to the analysis, they must be compared to a base group not considered a part of the inequality. In the case of this analysis, white students are used in comparison to Hispanic, and Black students, while economically advantaged students are compared to advantaged students. Specifically, economically disadvantaged student as defined by the state are considered disadvantaged if they are eligible for free or reduced-price meals under the National School Lunch and Child Nutrition Program, and advantaged students were derived by information present in the dataset. The percentage of economically disadvantaged student's times the rate was subtracted from the total rate, which was then divided by the percentage of advantaged students there were. In order to actually compare the groups, however,

a new variable was created for each dependent variable. The measurement of each variable for the white student population was subtracted by that of each of the other two racial groups, in order to find the difference between the groups. Because of this, there are three dependent variables for each measurement.

In order to measure education inequality more broadly, specific performance measures were chosen to help show the difference in the classroom. Specifically, TAKS test passage rates and enrollment in advanced courses. TAKS, or the Texas Assessment of Knowledge and Skills, represents the standardized test that Texas uses to measure performance in their schools, and students take the exam in grades 3-11. Another standardized test, however, replaced TAKS in 2014, but that goes beyond the scope of the data in this research. It should be noted that the years measured also include data from the TAAS test, which provided testing from 1991- 2002. The TAKS test allows this analysis to have a measure of teacher quality and quality of the education that the student has access too. Even though standardized tests are often considered an incomplete measures of teacher performance and the quality of education, very few other measurements of performance in terms of education quality have presented themselves. Therefore, its use is necessary in order to have some measurement for that type of inequality. Additionally, enrollment in advanced courses represents opportunities that groups suffering from education inequality can use to get a better education. However, advanced courses, such as honors or AP courses, often have high requirements and can represent a barrier to these students. If teacher salaries were able to effectively reduce the difference between the groups for advanced courses, it would reveal that teachers can be effective at removing barriers of inequality.

Independent Variable

The independent variable in this study will take advantage of the 1999 bill that increased teacher salaries, as it created an endogenous intervention. Due to the endogenous intervention, this study does not need to address the issue of reverse causality, which has often plagued this type of research. Instead, the study will focus on the salary increase, $3000, and see its implications on education inequality, or more specifically the indicators of education inequality. In 1999 the average teacher salary was around $32,000, so this increase would constitute almost a 10% raise for most teachers, so it can be assumed that it could have major impacts on the education quality overall. However, the effect will not be instantaneous, and because of this, the study uses data from 1998-2012, in order to better gauge the long-term effect. Also all the dependent variables were lagged, as it would be assumed that teacher salaries would ultimately begin to have effects a year after imposed. The specific variable used to measure this increase was the average teacher base salary. This specification is important because teachers are paid on an experience scale as well as have additional incentives to have some specific skills/education.

Control Variables

In order to account for some significant differences in both geographical and overall populations, this study uses several control variables. For the geographical issues, the study uses standardized tax property value per pupil and the Comparable Wage Index. Standardized property tax value helps account for major funding issues between the schools, which wouldn't be accounted for in the fixed affects if the wage index were to vary over time. Schools in affluent neighborhoods will receive more benefits than schools in poorer locations, even if the Robin Hood law helps reduce it, so this difference must be adjusted for in the model. Additionally, the Comparable Wage Index accounts for regional differences in pay across the state of Texas.

Teachers in large metropolitan areas are paid more than rural counterparts, due to cost of living and competition. To address this, the wage index controls for the systematic regions variation between college graduates who are not educators (Taylor, 2016). Then specifically for the model dealing with attendance rate, percentage of white students was used in order to account for schools with high racial populations. The reason why only this model received this control variable comes from issues regard the calculation of the attendance variable, which overall came out negative. The raw data seemed to suggest that black students had a higher attendance rate then white students, so in an attempt to try and explain this occurrence the control variable was added. This was done with the belief that schools with disproportionately large disparities in racial groups might have significant different in attendance for the minorities, which in this case would be white students.

On the issue of major population difference, the study uses TAKS passage rate for all students, and teacher experience. The TAKS rate addresses the issue of schools having larger numbers of high achieving students, rather than developing those students. Certain populations will have differences, and it can often be seen that some schools attempt to only have high achieving students and move other students to other schools. Controlling for test scores allows the model to account for these scenarios and lets the model focus on educational inequality better. There is also the scenario that is possible that schools focus on maximizing test performance but let the other aspects of education fail. If students only know test taking strategies then they are likely to fail in other aspects of school, or even lack to motivation to progress further. The study also controls for teacher experience, for similar reasons. Some schools have an abnormally high number of teachers with experience, and some have mostly new teachers. This can come from the school administration, how new the schools are, or the location of the school, all of which are

not topical to this study. Also, teacher salary is based on experience level, so schools with teachers with more experience will make more on average than newer schools, which needs to be controlled for.

Model

This study uses a conservative approach to the model due to the overall complexity of the issue, as there are hundreds of variables that could affect what is being measured. To address this issue the model being used is a two-way fixed effect time series regression model. Although this model will decrease the amount of impact that will be seen from teacher salary, any effect seen will surely exist. The two-way fixed effects hold constant both years and districts, meaning that any district level difference, as well as variation over time will be accounted for. As education inequality represents such a large and complex issues, a large number of unobserved variables are influencing it, making it impossible to account for without a fixed effect model. However, will overcompensate for the regional differences in most of the cases and will likely decrease the level of significance seen in the results. This means that even though any significance that is seen is surely there without a risk of omitted variable bias, smaller relationships are likely to be removed. The reason that this model is considered a conservative approach is specifically because of this fact, it is a blunt instrument that will show strong relationships with they truly exist in the data, but in doing so, remove some of the relationship, as well as hide others.

CHAPTER IV

RESULTS

The overall outcome of this research shows that increasing teacher salary correlates strongly with reducing education inequality, although the impacts vary across the different indicators. The most promising results, in terms of what matters to policy makers, comes from the decrease in the difference between the affluent students and the other groups by a significant amount. In order to calculate the regression results into real world results, the different indicators were predicted based off the model and then predicted again with the teacher salaries increased by 1000. This way the results show how much a policy maker may impact education inequality per $1000 they spend on teacher salaries. It should be noted, that the relationship is likely nonlinear, but given how underpaid teachers currently are, increases should act in a linear fashion, up to massive salary changes.

The primary method schools and policy makers use to gauge student performance comes through standardized testing. As can be seen in Table VI. the gap between affluent students and racial/economical disadvantaged student's remains fairly large, at between 13-19 percentage points, so the fact that teacher salaries correlate strongly in decreasing that rate reveals a significant outcome. In Table IV, all three groups have significant outcomes in terms of the regression results. Economically disadvantaged students saw a decrease in the difference of 1.7 percentage points per $1000 spent, Black students saw a decrease of 1.7 percentage points, and Hispanic students saw a decrease of 1.4 percentage points. While these numbers are relatively small, they still represent a significant impact in terms of decreasing education inequality. The idea being that the salary increases attract higher quality teachers, who in turn are able to

overcome the inequality that the students face. Higher quality teachers would be able to more effectively engage with their students, as well at increase the overall education quality the students receive. Because of unequal educational opportunities for the selected groups, this increased engagement and quality would have a larger impact than on the more affluent groups (Darling-Hammod, 2003).

Graduation rate and attendance rate also saw some results, however only for a specific population group. In Table III and V, the regression outputs reveal only significance for the black student population. Table VI reveals a clearer outcome of these results, with black student population decreasing the difference between the white student population by 2.7 percentage points per $1000. While this is much larger than the TAKS, the graduation rate difference was already small, meaning that any impact will show up as a big change between the two groups. This trend continues with the attendance rate, however with an issue with the data. The black students increased the gap between them and the white students by 4 percentage points, but in a negative relationship still. According to the literature, there exists a significant difference between white and black students in terms of their attendance, however when calculating that difference with the data from the TEA, the difference came out negative. This could possibly be explained by predominately black schools having low attendance by the white students there, or it could be that white students are more likely to stay home when sick. The clear results remain that an outside variable influences the data, and the results, although significant, should be taken with a grain of salt.

An interesting result from the graduation rate and attendance models is that it only affected the black student population. Migrant works might have had an effect for Hispanic, as their appearance varies significantly over time, but there also exists a few reasons why it might affect

black students more significantly. One of which is the geographic concentration of the black population in Texas. Many schools have a very large majority of black students. These schools also tend to be located in poor or unfavorable locations, meaning that schools have a much harder time finding teachers willing to teach at those locations. However, with the large increase in teacher salaries, it likely incentivized more qualified teachers to take on those jobs, and thus decreasing the difference for black students and white students in the school district. Another reason for this finding, especially in Texas, comes from that fact that Hispanics are the mean, in the case that they are fairly evenly distributed across the districts and tend to represent the average of all the groups. While geographic concentrations of Hispanic students exist, they are not as pronounced as the black student population, so the salary increase wouldn't have had as a profound impact on their group. Economically disadvantaged students differ in that any ethnic group could be represented, and their status remains hidden from casual perception. Because of how diverse their group is, they represent the group to have the least impact from the changes.

Although most of the indicators showed significant results, enrollment in advanced courses and dropout rates show nothing significant. Table I and II, show that for both indicators for all groups reveal no significance. Advanced courses showed the most promise with significance for both black and economically disadvantaged students being in the 13-percentile range and showing a large impact for affecting the difference between affluent and not. This exemplifies an example of the model being too conservative and removing some of the variation that would show a more significant relationship. The dropout rate, more understandably, shows no relationship, due to how many times the definition of a dropout has changed. Initially only high school was considered, but then middle school was added as well, causing discontinuity in the data. Additionally, other effects like transfers effect the measurement as there are no incentives

for districts to follow-up on the requests, so often times a student will request a transfer and never follow through. This comes about due to districts not wanting to increase their dropout rate so often times they will ignore such occurrences. This has led to issues calculating an actual dropout rate that realistically shows the dropout rate for school districts, and as such remains difficult to show relationships for academic research.

As can be seen in all the tables, the R squared for all the models stays fairly low, however this outcome should not be unexpected. It varied from .0001 all the way to .025, and this result makes sense given the model used. The two-way fixed effects model will greatly reduce the amount of variation seen and explained. However, even if that were not the case, education inequality is a very complex topic with thousands of variables influencing it, so it would make sense that for this type of analysis variation does not matters so much as the results.

CONCLUSION

The primary purpose for this research was to fill a gap in the literature on teacher salaries. The reverse causality issue severely hampered other research on salaries, but the method done in this research shows an alternative approach. Future research could replicate the model done, and apply it to other aspects of education, everything from teacher migrations from other states, to the specific impact teacher salary had on math scores. Most literature about salaries has attempted to analyze merit pay for teachers, but without innovation it is likely that field will continue to not produce results. Instead future research should attempt to explain all the impacts that paying teachers a comparable wage might do. Investment in education is lacking in the United States, and teacher are just now starting to fight back in a big way. The current momentum of teacher's striking can used in a positive light in research, increasing attention to pressing matters that can actually do good, like paying teachers more.

Although the results of the research show significant relationships, there were short fallings in the model that should be addressed. Many of the indicators showed no relationship, and only some of the groups tested had significance. The data used in the project relies heavily on generic information provided by the TEA, so a study using more specific measures, possibly on the individual level could show better results. Additionally, there were coding errors in terms of the attendance rate for black students, which should not have been negative, although other measures were checked thoroughly for similar issues to ensure validity. Future studies with this data should attempt to account for the measurement error related to the dropout rate and attempt to resolve the issue with the attendance rate. Furthermore, it might be possible to create a more

accurate education inequality variable, by taking into account more specific measures and calculating an explicit coefficient for it.

Policymakers should really consider all the implications of paying their teachers more. Besides for the obvious impact on teacher turnover and drawing more teacher's in, it can also have significant impacts on the lives of the students. Across the board, for all the groups studied, increasing teacher salaries were strongly correlated with decreasing the difference in test scores. This result can easily be explained by simple labor economics, offering higher pay for positions will attract more qualified individuals. Teachers have long been plagued by terrible turnover rates and lack of qualifications, and schools have had to make do with the situation. For too long this trend of educational funds eroding has plagued our nation, it's time to start pushing back and help show the benefits that can come from properly funding the system and our teachers. Teachers are beginning to fight back and research can help become a lynchpin in the fight to secure more funding. The possibility of real change happening grows more by the day, this is the time to help provide the answers that are needed so that change can actually accomplish something.

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APPENDIX

Table I.

Advanced Enrollment Regression			
	(1)	(2)	(3)
VARIABLES	Black Adv	Econ Disv Adv	Hispanic Adv
Teacher Salary	-0.000104	8.23e-05	5.71e-05
	(6.83e-05)	(5.41e-05)	(5.37e-05)
Tax Property Value	1.86e-06**	-9.67e-07***	3.44e-07
	(9.21e-07)	(2.79e-07)	(2.99e-07)
Teacher Experience	-0.0981	0.205***	-0.0394
	(0.0925)	(0.0639)	(0.0646)
Comparable Wage Index	11.56***	4.003	8.525***
	(3.265)	(2.628)	(2.627)
TAKS Passage(All)	-0.0138	-0.0218	-0.0198
	(0.0223)	(0.0155)	(0.0157)
Observations	8,757	14,191	13,523
R-squared	0.011	0.015	0.006
Number of distnum	701	969	965

Table II.

Dropout Regression			
	(1)	(2)	(3)
VARIABLES	Black Drop	Econ Disv Drop	Hispanic Drop
Teacher Salary	-0.000110	-8.19e-05	-0.000100
	(9.04e-05)	(7.75e-05)	(7.21e-05)
Tax Property Value	1.87e-06	-1.05e-07	5.03e-07
	(1.32e-06)	(4.57e-07)	(3.95e-07)
Teacher Experience	0.0235	0.0584	-0.0972
	(0.136)	(0.0937)	(0.0931)
Comparable Wage Index	8.616*	18.19***	-1.695
	(4.777)	(4.315)	(3.733)
TAKS Passage(All)	0.0481	0.00558	0.0200
	(0.0306)	(0.0225)	(0.0220)
Observations	4,166	7,489	6,906
R-squared	0.042	0.074	0.032
Number of distnum	522	958	800

Table III.

Attendance Regression			
VARIABLES	(1) Black Att	(2) Econ Disv Att	(3) Hispanic Att
Teacher Salary	-1.30e-05*	-3.75e-06	-1.89e-06
	(7.17e-06)	(2.64e-06)	(4.18e-06)
Tax Property Value	4.51e-08	1.58e-08	9.98e-09
	(7.57e-08)	(1.33e-08)	(2.32e-08)
Teacher Experience	-0.00780	0.00780**	0.00847*
	(0.00923)	(0.00315)	(0.00511)
Comparable Wage Index	0.495	-0.500***	-0.452**
	(0.341)	(0.136)	(0.217)
TAKS Passage(All)	0.00794***	-0.000796	-0.00437***
	(0.00219)	(0.000756)	(0.00122)
% White Student	-0.00122	0.0174***	0.0200***
	(0.00302)	(0.00109)	(0.00173)
Constant	-0.631	-0.0816	-0.222
	(0.416)	(0.154)	(0.245)
Observations	10,612	15,174	14,781
R-squared	0.011	0.064	0.091
Number of distnum	816	1,019	1,015

Table IV.

TAKS Regression			
VARIABLES	(1) Black Test	(2) Econ Disv Test	(3) Hispanic Test
Teacher Salary	-0.000339***	-0.000258***	-0.000190***
	(7.73e-05)	(6.53e-05)	(4.99e-05)
Tax Property Value	-8.17e-07	2.05e-07	4.03e-07
	(9.30e-07)	(3.32e-07)	(2.78e-07)
Teacher Experience	0.0150	0.270***	0.0309
	(0.104)	(0.0785)	(0.0627)
Comparable Wage Index	1.682	0.914	-3.790
	(3.747)	(3.397)	(2.589)
Observations	9,046	14,210	13,286
R-squared	0.112	0.027	0.079
Number of distnum	776	1,019	1,010

Table V.

Graduate Regression			
VARIABLES	(1) Black Grad	(2) Econ Disv Grad	(3) Hispanic Grad
Teacher Salary	-0.000245**	-0.000128	0.000110
	(0.000121)	(9.91e-05)	(9.68e-05)
Tax Property Value	-7.11e-06***	1.32e-07	-8.00e-07
	(1.80e-06)	(6.21e-07)	(5.16e-07)
Teacher Experience	0.157	0.164	-0.0730
	(0.181)	(0.120)	(0.124)
Comparable Wage Index	-1.217	-17.52***	4.885
	(6.165)	(5.396)	(4.848)
TAKS Passage(All)	-0.0829**	0.0150	-0.0829***
	(0.0418)	(0.0295)	(0.0302)
Observations	4,544	10,547	7,594
R-squared	0.073	0.089	0.040
Number of distnum	527	961	816

Table VI.

Variable	Obs	Mean	Std. Dev.	Min	Max
basecasetakse	15,341	15.01693	1.872875	.9124647	20.43126
plus1000takse	15,341	14.75931	1.872875	.6548532	20.17365
basecasetaksh	15,341	13.60732	2.450286	2.876611	19.82673
plus1000taksh	15,341	13.41771	2.450286	2.686997	19.63712
basecasetaksb	15,341	19.57471	3.430079	-8.215672	26.30528
plus1000taksb	15,341	19.23598	3.430079	-8.554397	25.96656
Basecaseattb	15,327	-.3215823	.1441755	-.9308264	.184965
plus1000attb	15,327	-.3339911	.1441755	-.9432352	.1725562
Basecaseatth	15,327	-.0002469	.2648796	-.8343439	.6639369
plus1000atth	15,327	-.0089077	.2648796	-.8430048	.655276
Basecaseatte	15,327	.3659815	.4857135	-.909218	1.255349
plus1000atte	15,327	.3622312	.4857135	-.9129682	1.251598
basecaseadvb	15,327	9.822023	2.026175	5.653021	31.77707
plus1000advb	15,327	9.717944	2.026175	5.548942	31.67299
basecaseadvh	15,327	8.792337	1.510397	5.094947	13.32266
plus1000advh	15,327	8.84948	1.510397	5.152091	13.3798

basecaseadve	15,327	9.795107	1.223616	6.098651	14.50662
plus1000adve	15,327	9.884402	1.223616	6.187946	14.59592
basecasedroph	15,327	-4.572541	1.6337	-9.339876	4.261995
plus1000droph	15,327	-4.672835	1.6337	-9.44017	4.161702
basecasedropb	15,327	-2.703673	2.101309	-9.628654	20.44226
plus1000dropb	15,327	-2.81401	2.101309	-9.738992	20.33193
basecasedrope	15,327	-4.493969	1.770244	-7.578659	.8601905
plus1000drope	15,327	-4.511656	1.770244	-7.596345	.8425038
basecasegradh	15,327	19.77391	4.237069	-4.334549	49.91186
plus1000gradh	15,327	19.38908	4.237069	-4.719379	49.52703
basecasegradb	15,327	31.25614	14.69182	-15.70704	66.91805
plus1000gradb	15,327	30.41548	14.69182	-16.5477	66.07738
basecasegrade	15,327	8.380574	4.029436	-14.79283	53.24048
plus1000grade	15,327	7.810629	4.029436	-15.36278	52.67054

Note: e stands for Economical Disadvantaged, b for Black, h for Hispanic